

**IN THE SPECIFICATION**

Please amend the specification as follows:

[0011] In the cosmetic field, the problem was tackled by using various retinoid derivatives, AHA, kojic acid and arbutin. The good results obtained in vitro on cellular cultures are seldom reproduced ~~in-the~~for use in vivo.

[0015] Following the generation of slimming active substances based on direct activation of the lipolysis via phosphodiesterase inhibition (e.—g., caffeine), more sophisticated products emerged. Those products address either to the stimulation of membrane receptors and their systems of intracellular transduction (protein G), or to their inhibition (receptors alpha and neuropeptide Y). All these approaches aim at increasing the rate of intracellular cAMP.

[0022] We discovered, quite surprisingly, that molecules which contain a core 1,2,9,10-tetrahydroxy-noraporphine in their structure have at least one of, and often at the same time, a strong capacity of melanogenesis inhibition and an antioxyidant effect, as well as a significant activity against ~~the~~ lipogenesis.

[0023] The invention constituting the subject of the present application resides in the fact that we have discovered and demonstrated that the compounds derived from noraporphines of general formula I can do one or more of: reduce melanin production in an effective and non-toxic manner, block the lipogenesis, and present antioxyidant activity. The new derivatives ~~from~~—that constitute the subject of the present patent application are also of value in that they have good bioavailability, solubility, activity, stability or toxicological profile.

[0045] As for 2,9-dihydroxy-1,10-dimethoxy-6-methyl-noraporphine, 1,2,10-trimethoxy-9-hydroxy-6-methyl-noraporphine and 1,2,9,10-tetramethoxy-6-methyl-noraporphine, although known

as natural substances, they were never described ~~like as~~ active ingredients of any cosmetic or dermatopharmaceutical composition.

[0046] Thus the present invention also relates to ~~also~~ the cosmetic and dermatopharmaceutical compositions containing one or more compounds above of general formula I, including 2,9-dihydroxy-1,10-dimethoxy-6-methyl-noraporphine (formula I, R1 = H, R2 = R3 = CH3, R4 = H, R5 = CH3), and 1,2,10-trimethoxy-9-hydroxy-6-methyl-noraporphine (formula I, R1 = R2 = R3 = CH3, R4 = H, R5 = CH3) and 1,2,9,10-tetramethoxy-6-methyl-noraporphine (formula I, R1 = R2 = R3 = R4 = R5 = CH3), alone or in association, and a carrier, an active substance, and/or a principal adjuvant.

[0049] In the cosmetic and dermatopharmaceutical compositions, it can be advantageous to associate compounds derived from the general formula I with an extract of plant, and in particular an *glaucium flavum* extract such as ~~definite~~ defined above.

[0050] The *glaucium flavum* extract can be used either in liquid form, or in dry form obtained by precipitation, atomization, evaporation or lyophilization. The quantity of plant extract, such as ~~of~~ *glaucium flavum* extract, to be incorporated in the cosmetic or dermatopharmaceutical preparations lies between 0.01 and 100% (w/w), preferentially between 0.1 and 10% in weight of the final total composition.

[0070] The compositions of the present invention may further contain an effective amount of anti-wrinkle actives. Exemplary anti-wrinkle actives suitable for use in the compositions of the present invention include alpha-hydroxy acids such as lactic acid and glycolic acid or beta-hydroxy acids such as salicylic acid and salicylic acid derivatives, vitamins, in particularly vitamin B<sub>3</sub> and retinoids. Isoflavones and phytosterols are also particularly suitable.

[0072] The compositions of the present invention may include an effective amount of an anti-oxidant or a radical scavenger

for providing protection against UV radiation. Anti-oxidants/radical scavengers such as ascorbic acid (vitamin C) and its salts, ascorbyl esters of fatty acids, ascorbic acid derivatives (e.g., magnesium ascorbyl phosphate, sodium ascorbyl phosphate, ascorbyl sorbate), tocopherol (vitamin E), tocopherol sorbate, tocopherol acetate, other esters of tocopherol, butylated hydroxy benzoic acids and their salts 6-hydroxy acid (commercially available under the tradename Trolox®) gallic acid and its alkyl esters, especially propyl gallate, uric acid and its salts and alkyl esters, sorbic acid and its salts, lipoic acid, amines (e.g., N,N-diethylhydroxylamine, amino-guanidine), sulfhydryl compounds (e.g., glutathione), dihydroxy fumaric acid and its salts, lysine pidolate, arginine pilolate, nordihydroguaiaretic acid, bioflavonoids, curcumin, lysine, methionine, proline, superoxide dismutase, Extremozymes like that proposed under the name VENUCEANE® (proposed by SEDERMA, France), silymarin, tea extracts, grape skin/seed extracts, melanin, and rosemary extracts may be used.

[0078] As other lipids one may use, for example, lipids containing a lipophilic long chain of 12 to 30 carbon atoms, saturated or unsaturated, branched or straight-chain, for example an oleyl, lanolyl, tetradecyl, hexadecyl, isostearyl, lauryl, or alkoylphenyl chain. The hydrophilic group in these lipids may be ionic or non-ionic. The non-ionic groups may be groups derived from polyethylene glycol. One can also use advantageously, as lipids forming the lamellar phase, polyglycol ethers such as those described in French patents FR 1,477,048, FR 2,091,516, ~~No-FR~~ 2,465,780, and ~~No-FR~~ 2,482,128.

[0090] **Example No. 1: Synthesis of 2,9-diacetyloxy-1,10-dimethoxy-6-methyl-noraporphine (compound II)**

To a solution of 2,9-dihydroxy-1,10-dimethoxy-6-methyl-noraporphine (1.01 g ; 3.09 mmole~~s~~) in 20 ml of dichlorometane (DCM) are successively added, at room temperature, 3.09

equivalents of acetic anhydride ( $\text{Ac}_2\text{O}$ ) ( $900\mu\text{l}$ ; 9.52 mmol) then 1.99 equivalents of diisopropylethylamine (DIEA) ( $1.05\text{ml}$ ; 6.13 mmol). After one night of stirring at room temperature in the dark, oil ether (50 ml) and water (50 ml) are added. After extraction, the organic phase is dried on anhydrous sodium sulphate (5 g), is filtered and is evaporated. 1.15 g (2.795 mmol; 90.5 %) of 2,9-diacetyloxy-1,10-dimethoxy-6-methyl-noraporphine are isolated in as an odourless yellow solid after one night of drying ~~te~~in the desiccator.

[0100] The single figure shows the variation in melanin synthesis under exposure to kojic acid for 7 days (positive control), on the one hand, and under exposure to 2,9-diacetyloxydiacetyloxy-1,10-dimethoxydimethoxy-6-methylmethyl-noraporphine (compound II), object of the present demand on the other hand. The inhibition of synthesis observed after 7 days of exposure to those products is dependent on the test concentration. Inhibition varies from -28 to -51%. This demonstrates that this compound has a very interesting inhibitory activity on melanogenesis.

[0111] The following table shows the averages of the measurements (inhibition - in % of the witness - G-3-PDH activity in cultured pre-adipocytes treated by 2,9-diacetyloxy-1,10-dimethoxy-6-methyl-noraporphine, compound II) realized with 3 tests independent to each other. The enzymatic activity values are standardized with the number of cells.

ACTIVITY G-3-PDH / $10^6$ cells	
II - 0.03 mmol/l	- 49 %
II - 0.06 mmol/l	- 67 %
II - 0.09 mmol/l	- 76 %

[0113] The G-3-PDH significant inhibition shows 2,9-diacetyloxydiacetyloxy-1,10-dimethoxy-6-methyl-noraporphine (compound II) inhibiting capacity on the lipogenesis in the preadipocytes.

[0115]      **Example 7 :**      Inhibition                      of                      ~~Peroxydation~~  
Perixodiation(In Vitro)

[0116]      In order to seek an ~~antioxydant~~antioxidant activity,  
we                      evaluated                      2,9-diacetyloxy-1,10-dimethoxy-6-methyl-  
noraporphine (compound II) effect on the inhibition of  
peroxidation induced on liposomes by UVA or pair  $\text{HO}_2/\text{FeCl}_2$ .